भारतीय मानक

Indian Standard

IS 10223 : 2023

टो — केस्टर के लिए सामान्य अपेक्षाएं, माल कंटेनरों के परिवहन के लिए पद्धति

(पहला पुनरीक्षण)

General Requirements for Tow — Castor, System for Transportation of Freight Containers

(First Revision)

ICS 55.180.01

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June 2023 **Price Group 3**

Earth Moving Equipment and Material Handling Sectional Committee, MED 07

FOREWORD

This Indian Standard (First Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Earth Moving Equipment and Material Handling Sectional Committee had been approved by the Mechanical Engineering Division Council.

This standard was originally issued in 1982. The present revision has been taken up with a view to incorporating the modifications found necessary as a result of experience gained in the use of this standard. Also, in this revision, the standard has been brought into latest style and format of Indian Standards, and references to Indian Standards, wherever applicable have been updated. BIS certification marking clause has been modified to align with the revised *Bureau of Indian Standards Act*, 2016. The major changes in this revision are as follows:

a) A reference clause **2** has been added mentioning the latest version of the referred standards; and
b) A clause **6** regarding BIS certification marking has been added.

The composition of the committee responsible for the formulation of this standard is listed in Annex A.

During the manufacture of containers their repairing, and marshalling for loading/unloading, there is often a need to move fright containers quickly and easily without using cranes, gantries, side loading fork trucks, etc. To facilitate the transportation, this standard has been worked out with a system consisting of four fabricated castors (two swivel and two fixed) complete with special adaptor plates which lock positively by means of quick action securing screws into the corner fitting incorporated into freight containers.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 2022 ‘Rules for rounding off numerical values (*second revision*)’. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard

GENERAL REQUIREMENTS FOR TOW — CASTOR, SYSTEM FOR TRANSPORTATION OF FREIGHT CONTAINERS

(First Revision)

1 SCOPE

1.1 This standard specifies the general requirements of the tow-castor system for transportation of empty freight containers.

1.2 The materials and design of the castor, wheel, and towbar are not covered in this standard.

2 REFERENCES

The standards listed below contain provisions which, through reference in this text, constitute provisions of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards listed below:

IS No.	*Title*
IS 17522 : 2021/ ISO 22878 : 2004	Castors and wheels — Test methods and apparatus

3 TERMINOLOGY

3.1 For the purpose of this standard the following term and definition shall apply in addition to IS 17522.

3.2 Towbar — An integral part of the tow castor system which is easily fitted into the castor through some attachment, enabling towing manually.

4 GENERAL REQUIREMENTS

4.1 The tow castors system shall consist of two swivel castors complete with locking screws, two fixed castors complete with locking screws and towbars.

4.2 Tow castors shall be designed for towing empty containers up to 3 tonnes gross mass.

4.3 The load bearing capacity per corner of the tow-castor system shall be 750 kg.

4.4 Tow castor adaptors shall locate positively inside corner fitting of freight containers and shall be locked with locking screws.

4.5 The towbar shall be made of tubular fabrication. The towbar attachment shall lock into the front of container enabling towing manually.

4.6 Towbar attachment shall always be located into swivel castor end of container to give controllability of unit.

4.7 The towing of freight containers with tow castor shall be permitted on good, hard and level grounds.

5 TEST

Wheels and castors shall be tested as per IS 17522.

6 MARKING

6.1 Tow-castor may be marked with the manufacturer’s name or trade mark.

6.2 BIS Certification Marking

The product(s) conforming to the requirements of this standard may be certified as per the conformity assessment schemes under the provisions of the *Bureau of Indian Standards Act,* 2016 and the Rules and Regulations framed thereunder, and the products may be marked with the Standard Mark.

ANNEX A

(*Foreword*)

COMMITTEE COMPOSITION

Earth Moving Equipment and Material Handling Sectional Committee MED 07

Organization	*Representative(s)*
BEML Limited, Bengaluru	SHRI V. SEKAR **(*Chairperson*)**
Airports Authority of India, New Delhi	SHRI K. S. KUNWAR SHRI JASPAL SINGH (*Alternate*)
Automotive Research Association of India, Pune	SHRI A. AKBAR BADUSHA
BEML Limited, Bengaluru	SHRI HEMANT KUMAR (*Alternate*)
Bharat Coking Coal Limited, Dhanbad	SHRI ARUN NAND SAHAY SHRI CHANDRA SHEKHAR S. I. (*Alternate*)
Bharat Heavy Electrical Limited, New Delhi	SHRI G. BHAGCHANDANI SHRI S. K. BHAUMIK (*Alternate*)
Caterpillar India Private Limited, Chennai	SHRI K. REJI JOSE SHRI V. BHASKARAN (*Alternate*)
Cement Corporation of India Limited, New Delhi	SHRI A. K. SRIVASTAVA SHRI ANURAG KUMAR SAINI (*Alternate*)
Central Mine Planning and Design Institute Limited, Ranchi	SHRI PARAG MAJUMDAR SHRI PRAVEEN K. SINHA (*Alternate*)
Directorate General Factory Advice Service and Labour Institutes, Mumbai	SHRI SUMIT ROY
Directorate General of Mines Safety, Dhanbad	SHRI D. B. NAYAK SHRI VIJAY YADAORAO BARAPATRE (*Alternate*)
Directorate General of Quality Assurance, Ministry of Defense, New Delhi	LT COL SIDHARTH KHATTRI SHRI RAGHUBIR SINGH (*Alternate*)
Engineers India Limited, New Delhi	SHRI K. C. PAIKAR SHRI R. R. SHRIVASTAVA (*Alternate*)
Epiroc Mining India Limited, Nashik	SHRI PRAKASH GORE
Escorts Construction Equipment Limited, Faridabad	SHRI FAIZ AHMAD MS RUPALI SHARMA (*Young Professional*)
Fact Engineering and Design Organization, New Delhi	SHRI R. K. PALLAI SHRI JUBY CHANDY (*Alternate*)
Heavy Engineering Corporation Limited, Ranchi	SHRI ARAVIND DOSS SHRI AMIT PAL (*Alternate* I) SHRI VIJAY KUMAR (*Alternate* II)
Indian Construction Equipment Manufacturers Association, New Delhi	SHRI K. V KRISHNAMURTHY
Indian Institute of Technology (ISM), Dhanbad	PROF L. A. KUMARASWAMIDHAS

Organization	*Representative(s)*
JCB India Limited, New Delhi	Shri Saurabh Dalela Shri Vivek Rawat (*Alternate*)
John Deere India Private Limited, Mumbai	Shri Karthik Kaliappan Shri Raj Anand (*Alternate*)
Komatsu India Private Limited, Bengaluru	Shri M. Rajendran Shri Vikrant Sharma (*Alternate*)
L & T Komatsu Limited	Shri G. S. Narayana Shri K. Keshava (*Alternate*)
Mahindra Construction Equipment, Chakan	Shri Goplakrishna Rajendra
Manitou India Limited, Greater Noida	Shri Atul K. Singhal
Mcnally Bharat Engineering Company Limited, Kolkata	Shri Ashok Kumar Bose Shri Sandipan Daw (*Alternate*)
Ministry of Heavy Industries and Public Enterprises, Department of Heavy Industry, New Delhi	Shri Sushil Lakra
Ministry of Shipping, New Delhi	Shri Anil Pruthi Shri Ramji Singh (*Alternate*)
Mumbai Port Trust, Mumbai	Shri Dilipvishwanathan Shri Pandian Sekar (*Alternate*)
NTPC Limited, New Delhi	Shri Madhukar Anand Shri P. S. Chatterjee (*Alternate*)
National Council for Cement and Building Materials, Faridabad	Shri Kapil Kukreja Shri Saurabh Bhatnagar (*Alternate*)
National Mineral Development Corporation, Hyderabad	Shri S. J. Rao Shri S. K. Roy (*Alternate*)
Office of Development Commissioner (MSME), New Delhi	Shri Susanta Kumar Som Shri Suvankar Santra (*Alternate*)
Project and Development India Limited, Noida	Shri Narendra Singh Shri Abhijit Mahata (*Alternate*)
Volvo Construction Equipments India Private Limited, Bengaluru	Shri Sai Prasad Polipalli Shri K. Raghuraman (*Alternate*)
In Personal Capacity (*165, 2nd Main Road, 4th Cross, Chamarajpet, Bangalore-560018*)	Shri G. Nagaraj Venkatesh
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Member Secretary
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(Mechanical Engineering), BIS

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Amendments Issued Since Publication

Amend No.	Date of Issue	Text Affected

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